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JUL 31 1997

IN REPLY
REFER TO

AQOF

MEMORANDUM FOR COMMANDERS, DEFENSE CONTRACT MANAGEMENT
DISTRICTS
COMMANDERS, DCMC CONTRACT ADMINISTRATION
OFFICES

SUBJECT: DCMC Memorandum No. 97-76 , Changing the Metric for Engineering
Assessment (POLICY)

This is a Policy Memorandum. It expires in one year or when the DCMC Metrics Guidebook reflects the change in the engineering metric. Target audience: All DCMC employees involved in Systems Engineering, Configuration Management, or Metrics.

When we first began measuring performance in the engineering area, we used Major/Critical Waivers/Deviations (M/C W/Ds) and Class I Engineering Change Proposals (ECPs). ECPs were divided into four categories: To Correct Design Errors, Requirements Changes, Improvements, and Other (e.g., updating material requirements, or replacing obsolete parts). In choosing an engineering metric, we concentrated, in FY 97, on reducing waivers/deviations and Class I ECPs associated with design errors.

Since the beginning of FY 97, ECPs to correct design errors have gone down by over 60% from the average for FY 96. This is the kind of success we look for, when attempting to reduce errors of any kind. However, the number of ECPs to correct design errors now only comprises about 14% of the total ECPs reviewed by DCMC personnel.

By making use of the additional metric data on requirements changes and other ECPs collected through the Automated Configuration Tracking System (ACTS), we will be addressing two additional areas of concern of government and contractor program managers. Massachusetts Institute of Technology recently completed some research for the Lean Aircraft Initiative, a program DCMC is supporting, which looked into the main sources of program instability, as rated by government and contractor program managers. Both cited two of the top three reasons (out of a total of ten) as technical problems and requirements changes.

Therefore, effective starting October, 1997, the Engineering Assessment metric number 3.10.1, ECPs to Correct Design Errors/1000 Contracts, will change to Total ECPs (minus Improvement ECPs) per 1000 contracts. There will be no additional work incurred by the field in gathering data for this metric, since reporting already occurs

through ACTS. A goal for the new metric will be established in conjunction with the FY98 DCMC Performance Plan. The M/C W/D metric will remain the same.

Attached is a page for you to insert into the DCMC Metrics Guidebook until the next edition comes out. It fully explains the new ECP metric, its definition, computation, etc. If you have any questions, contact Mr. Mike Ferraro, AQOF, at (703) 767-3352.



ROBERT W. DREWES
Major General, USAF
Commander

Attachment
New Engineering Assessment
page to DCMC Metrics Guidebook

DCMC Metrics Guidebook

3.10 Engineering Assessment

Purpose: To ensure compliance with applicable contract requirements by assessing the effectiveness of contractor engineering efforts in designing, developing, testing, modifying and managing systems, equipment and software. Also, to help reduce the number of ECPs associated with technical problems and requirements changes. Improvement ECPs are excluded, so as not to discourage upgrades in product and system performance.

Metric Operational Definitions

3.10.1 Total ECPs (minus Improvement ECPs) per 1,000 Contracts

Definition: The total quantity of Class I Engineering Change Proposals (ECPs), minus those ECPs processed as Improvement ECPs, per 1,000 contracts on-hand.

Population: All Class I ECPs processed by the contract administration office (CAO), minus those processed as Improvement ECPs, during the period.

Source: The data required to populate this metric is in the Automated Configuration Tracking System (ACTS).

Computation: The quantity of Total Class I ECPs, minus Improvement ECPs, per 1,000 contracts on-hand is calculated by subtracting those ECPs categorized as Improvement ECPs, from the total quantity of ECPs in the population, and dividing the resulting total by the total quantity of Prime Contracts On-Hand (see metric 1.1.1 on Page 1) divided by 1,000.

Example: If the total quantity of ECPs equals 1,200 and the quantity of Improvement ECPs equals 200, subtract 200 Improvement ECPs from 1,200 Total ECPs to determine the numerator of 1,000. If the

quantity of prime contracts on-hand equals 400,000, divide by 1,000 to determine the denominator of 400. Then divide the 1,000 ECPs processed by the 400 to obtain the result of 2.5.

Stratification: Total ECPs, minus Improvement ECPs, per 1,000 contracts on-hand is stratified by District and CAO. When the Automated Metrics System is deployed, stratification will expand to include contractor, service, buying command and team.

Desired Outcome: The desired outcome is to provide the customer with the Right Item. We do this by influencing the buying activities to propose proper/stable requirements, and contractors to design products that are producible and meet the contractual functional/performance system requirements, thus reducing the necessity to write/process the great majority of ECPs.

Data Input Instructions: No special data input requirements exist. Data input will be automatically accomplished through field use of ACTS to record Class I ECP configuration actions.

Data Element:

Total Class I ECPs, minus Improvement ECPs:

The total quantity of Class I ECPs, minus Improvement ECPs, processed by the CAO during the period. *Note: This includes Design Error ECPs (improve performance to meet requirements, eliminate interface incompatibilities or hazardous conditions, or correct obvious design errors); Requirements ECPs (implement upgrades, modifications, or other requests, e.g. changes to requirements or specifications); Other ECPs (add sources to control drawings, update material requirements, replace obsolete parts); does not include Improvement ECPs (eliminate environmental hazards, improve manufacturability or improve performance beyond requirements).*